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EXAMINER	
LUU, CUONG V	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/760,992	STRAUS, ELLIOTT J.	
	Examiner	**Art Unit**	
	Cuong V. Luu	2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _27 April 2009_.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _11-18 and 20-28_ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _11-18, 20-28_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Claims 11-18 and 20-28 are pending. Claims 11-18 and 20-28 have been examined. Claims 11-18 and 20-28 have been rejected.

Response to Arguments

1. Applicant's arguments filed 4/27/2009 regarding claim 11, see pages 6-8, have been fully considered but they are not persuasive. The Applicant argues that Zuyev does not teach using said pattern to determine optimal placement of a coating injection nozzle so as to minimize the flow time for an in-mold coating composition. The Examiner respectfully disagrees. On page 1 col. 2 paragraph 2, Zuyev states:

   > Key to optimizing the IMC process is to be able to predict the fill pattern, so as to locate the injection nozzle or nozzles, in locations where the potential for surface defects in the appearance region of the part are minimized or eliminated [1,3]. CAD software is available to predict the flow of IMC [4,5]. We have previously shown that the software does a good job in predicting the fill pattern [3]. Here, we use the software in combination with an optimization algorithm as explained below, to select the injection gate location.

   Zuyev on page 2 col. 1 paragraph 5 says:

   > We are to locate the injection gate in any place of the part perimeter. The optimization criteria selected is to minimize the time difference between the total fill time and the time at which the thinner parts are filled. For now we selected as the minimization criteria the sum of both time differences (y) as a function of the position given by the coordinates (x_1, X_2) of the injection points, which correspond to the values of the horizontal axis and the vertical axis referenced to (0,0) as the origin (See Figure 3).

In these passages, Zuyev teaches using predicting fill pattern to determine locations for injection nozzles to minimize cure time and at the same time as an optimization criterion to minimize the time difference between the total fill time and the time at which the thinner parts are filled. This criterion to minimize the time difference between the total fill time and the time at which the thinner parts are filled is interpreted as minimize the flow time for an in mold coating composition to flow over at least a part of a molded article.

The Applicant also argues that Zuyev, Chen, and Navti would not have provided ease of implementation and accuracy, especially with regard to two dimensional flow problems. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., ease of implementation and accuracy, especially with regard to two dimensional flow problems) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

The Applicant also argues that Navti's method does not result in predicting a coating composition fill pattern and does not obtain the coating composition thickness distributions for the mold. In the Action mailed out on 1/3/2009. the Examiner said Chen teaches:

said step of predicting a coating composition fill pattern in said mold is performed by determining the relation between a pressure in said mold and a flow rate of said coating composition using numerical method (p. 2 col. 2 the last 2 lines of the col. and p. 3 col. 1 lines 1-2 and equation 11);

but does not teach using a finite difference method comprising the steps a), b), c) and d) as recited in the claimed invention.

Navti teaches using a finite difference method in determining relation between a pressure in said mold and a flow rate of said coating composition and solving iteratively (p. 42 paragraphs 2-3 and section 2. Physical Model, and p. 46 section 3.1 Discretisation in time).

By saying that the Examiner clearly indicates that Chen teaches predicting a coating composition fill pattern in said mold is performed by determining the relation between a pressure in said mold and a flow rate of said coating composition using numerical method (p. 2 col. 2 the last 2 lines of the col. and p. 3 col. 1 lines 1-2 and equation 11) and obtain the coating composition thickness distributions for the mold (p. 2 col. 2 sections Mathematical model and Filling stage). What Chen does not teach is using finite difference method to perform these determinations, And Navti teaches using finite difference method in solving equations in in-mold coating. Claim 11, therefore, remains rejected.

1. As per claim 20, the Applicant argues that it is allowable for the same arguments as those addressed in item 1. The Applicant further argues that Chen does not teach predicting the coating fill pattern for at least a two dimensional surface. The Examiner respectfully disagrees. Chen does teach this limitation on page 2 col. 2 section Filling stage, Chen states, "For a simple rectangular part, the flow can approximated as one-dimensional" and goes on to perform the fill pattern in one dimension. These teaching of approximating flow pattern on two-dimensional surface by using one-dimensional analysis reads onto this limitation of predicting the coating fill pattern for at least a two dimensional surface. Claim 20, therefore, remains rejected.

2. As per claims 12-18 and 21-28, they are argued allowable for respectively depending on allowable claims 11 and 20. Since claims 11 and 20 remain rejected, claims 12-18 and 21-28 remain rejected.

3. The objection of claim 27 has been withdrawn in light of amendments to the claim.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 11-18 and 20 -28 are rejected under 35 U.S.C. 112, first paragraph.

4. Claim 11 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for predicting a coating composition fill pattern in said mold and using said pattern to determine optimal placement of a coating injection nozzle so as to minimize the flow time for an in-mold coating composition, does not reasonably provide enablement for using said pattern to determine optimal placement of a coating injection nozzle so as to minimize the flow time for an in-mold coating composition. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. Furthermore, the fill pattern depends on the location of the injection nozzle. According to the description, an initial location for placing an injection nozzle is chosen, and then an analysis on fill pattern is done. Then that fill pattern is used to determine a location for optimizing/minimizing the flow

time. However, since fill pattern depends on location of injection nozzle, there would be different optimal locations for optimizing the flow time if the initial locations used for predicting the fill patterns were chosen differently. Thus there is a high level of unpredictability as to whether the instant invention will function as claimed. Claim 11 recites the limitations:

predicting a coating composition fill pattern in said mold; and

using said pattern to determine optimal placement of a coating injection nozzle so as to minimize the flow time for an in-mold coating composition.

The combination of these two limitations is not enabled.

- Scope or breadth of the limitations: the scope of these limitations are drawn to making prediction of a coating composition fill pattern and then using this predicted fill pattern to determine optimal placement of a coating injection nozzle so as to minimize the flow time for an in-mold coating composition.
- The Nature of the invention: the nature of the invention is directed to a method for determining a location for placing an injection nozzle for minimizing the flow time for an in-mold coating composition to flow over at least a part of a molded article.
- Amount of guidance or direction provided by the inventor: The specification does not provide any guidance as to how to determine optimal placement of a coating injection nozzle so as to minimize the flow time for an in-mold coating composition. In the specification pages 19-24, the Applicant only analyze the fill pattern for an in-mold coating composition without describing how to how to determine optimal placement of a coating based on the fill pattern. To examine this limitation, the Examiner ***assumes*** (even though there is still lack of scope of enablement) that if there is an art describing and analyzing the fill pattern of in-mold coating composition

based on an injection location, said art inherently implies or suggests the determination of optimal placement of a coating injection nozzle so as to minimize the flow time for an in-mold coating composition.

For art rejection of the combination of these limitations the Examiner interprets that the prediction is based on only one fixed location of initial injection nozzle.

5. Claim 11 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claim recites the limitation using said method in conjunction with a method to minimize a cure time of the in-mold coating composition, but said limitation is not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

6. For similar reasons discussed in items 2 and 3, claim 20 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement and scope of enablement.

7. Claims 12-18 and 21-28 inherit the defects of claims 11 and 20, respectively.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 11-18 and 20-28 rejected under second paragraph of 35 U.S.C. 112.

8. Claims 11 and 20 are rejected under second paragraph of 35 U.S.C. 112. Claims 11 and 20 provides for the use of method to minimize a cure time, but, since the claims do not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

9. Claims 12-18 and 21-28 inherit the defects of claims 11 and 20, respectively.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 11, 17-18, 20-21, and 27-28 are rejected under 35 U.S.C. 101.

10. Claim 11 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. With regard to claim 13, which recites that the steps of predicting a fill pattern and determining optimal placement are performed by a computer, it is interpreted that steps in claim 11 can be performed without tied to a computer, specifically being performed manually. Therefore, the claim is under 35 U.S.C. 101 because it is an improper method claim for not being tied to a statutory class.

11. Similarly, claim 20 is under 35 U.S.C. 101 because it is an improper method claim for not being tied to a statutory class.

12. Claims 17-18, 21, and 27-28 inherit the defects of claims 11 and 20 as rejected in items 8 and 9, respectively.

13. Claims 11 and 20 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd.* v. *Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966). The claims recite the step of using a method to minimize a cure time of the in-mold coating composition without setting forth any steps involved in the method, results in an improper definition of a method, i.e., results in a claim which is not a proper method claim under 35 U.S.C. 101.

14. Claims 12-18 and 21-28 inherit the defects of claims 11 and 20 as rejected in item 11, respectively.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

> invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 11-14 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zuyev et al. (Optimization Injection Gate Location and Cycle Time for the In-Mold Coating (IMC) Process, Antec 2001, 195. Since pages are not numbered, for the purpose of examining, the examiner numbers them from 1 for the first page to 5 for the last page and columns 1 and 2 for each page) in view of Chen et al. (In-Mold Functional Coating of Thermoplastic Substrate: Process Modeling, Antec 2001, 255, Since pages are not numbered, for the purpose of examining, the examiner numbers them from 1 for the first page to 5 for the last page and columns 1 and 2 for each page) and Navti et al. (Finite element modelling of surface tension effects using a Lagrangian-Eulerian kinematic description, 0045-7825/97, 1997 Elsevier Science S.A.).

15. As per claim 11, As per claim 11, Zuyev teaches a method for optimizing the location of an in-mold coating injection port in a mold so as to minimize the flow time for an in-mold coating composition to flow over at least a part of a molded article, said method comprising the steps of:

predicting a coating composition fill pattern in said mold (p. 1 col. 2 section Optimal Location of IMC Injection Point, paragraph 1); and

using said pattern to determine optimal placement of a coating injection nozzle so as to minimize the flow time for an in-mold coating composition to flow over at least a part of a molded article and to reduce the presence of surface defects of a coating formed from said in-mold coating composition (p. 1 col. 2 section Optimal Location of IMC Injection Point, paragraph 1, p. 3 col. 1 paragraphs 3-4); and

placing said injection nozzle in said optimal placement position (p. 1 col. 2 section Optimal Location of IMC Injection Point paragraph 1);

using said method in conjunction with a method to minimize a cure time of the in-mold coating composition (p. 2 col. 2 section Minimization of IMC Cure Time paragraphs 1-2)

However, Zuyev does not teach:

said step of predicting a coating composition fill pattern in said mold is performed by determining the relation between a pressure in said mold and a flow rate of said coating composition by using a finite difference method comprising the steps a), b), c) and d) as recited in the claimed invention.

Chen teaches said step of predicting a coating composition fill pattern in said mold is performed by determining the relation between a pressure in said mold and a flow rate of said coating composition using numerical method (p. 2 col. 2 the last 2 lines of the col. and p. 3 col. 1 lines 1-2 and equation 11) and obtaining the pressure and coating composition thickness distributions for said in mold coating (p. 2 col. 2 sections Mathematical model and Filling stage);

but does not teach using a finite difference method comprising the steps a), b), and d) as recited in the claimed invention.

Navti teaches using a finite difference method in determining relation between a pressure in said mold and a flow rate of said coating composition and solving iteratively (p. 42 paragraphs 2-3 and section 2. Physical Model, and p. 46 section 3.1 Discretisation in time). The method described by Navti in combination with Chen's teachings suggests steps a), b), c), and d) below.

a) defining a fixed spatial step to track a flow front location of the in mold coating composition,

b) advancing the flow front location by one spatial step for a fixed time increment,

c) obtaining the pressure and coating composition thickness distributions for said in mold coating, and

d) repeating said steps until the in mold coating composition filling process is complete.

It would have been obvious to one of ordinary skill in the art to combine the teachings Zuyev, Chen and Navti. Chen's and Navti's teachings would have provided ease of implementation and accuracy, especially with regards to two dimensional flow problems (p. 59 section 5. Conclusion) and optimized the process of in-mold coating (p. 1 col. 2 last paragraph and p. 2 col. 1 1st paragraph).

16. As per claim 12, Zuyev teaches instructions for carrying out said method are contained in a computer readable medium (p. 1 col. 2 of the page section Optimal Location of IMC Injection Point paragraph 1 of the section).

17. As per claim 13, Zuyev teaches said steps of predicting a fill pattern and determining optimal placement of said nozzle are performed by a computer (p. 1 col. 2 of the page section Optimal Location of IMC Injection Point paragraph 1 of the section).

18. As per claim 14, it is a choice for one of ordinary skill in the art to input data necessary for performing said steps into said computer manually. This limitation is, therefore, rejected.

19. As per claim 17, Zuyev teaches said process minimizes the potential for surface defects in an in mold coating formed on a surface of said molded article (p. 1 col. 2 section Optimal Location of IMC Injection Point paragraph 1).

20. As per claim 18, Chen teaches said method is used for an in-mold coating process including at least filling, packing, and solidification phases (p. 2 col. 2 paragraph 2).

Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zuyev in view of Chen et al. and Navti as applied to claims 13 above, and further in view of Walsh (US Patent 6,099,162).

21. As per claim 15, Zuyev teaches data necessary for performing said steps is provided to said computer by an instrument taking differential scanning calorimetry measurements,

    but does not teach the feature of <u>automatically</u> provided to said computer

    However, Wash teaches this limitation (col. 1 lines 43-53 and col. 3 lines 27-36. The sensors can be considered differential scanning calorimeters to obtain measurements as recited in col. 1 lines 43-53).

    It would have been obvious to one of ordinary skill in the art to combine the teachings of Zuyev, Chen, Navti, and Walsh. Wash's teachings would have accurately and continuously monitored the monitoring the curing process (col. 3 lines 24-27).

22. As per claim 16, Zuyev teaches said data is stored in a data collection means associated with said instrument (p. 2 col. 2 paragraph 3 of section Minimization of IMC Cure Time. These paragraphs teach using data measured by DSC to perform calculation. This suggests

this limitation) and then relayed to said computer (p. 1 paragraph 1 of section Optimal Location of IMC Injection Point).

Claims 20, 22-24, and 27-28 are rejected under 35 U.S.C. 103(a) as being anticipated by Zuyev et al. in view of Chen et al.

23. As per claim 20, Zuyev teaches a method for optimizing the location of an in-mold coating injection port in a mold so as to minimize the flow time for an in-mold coating composition to flow over at least a part of a molded article, said method comprising the steps of:

predicting a coating composition fill pattern in said mold over at least a two dimensional surface (p. 1 col. 2 section Optimal Location of IMC Injection Point, paragraph 1); and

using said pattern to determine optimal placement of a coating injection nozzle so as to minimize the flow time for an in-mold coating composition to flow over at least a part of a molded article and to reduce the presence of surface defect of a coating formed from said in-mold coating composition (p. 1 col. 2 section Optimal Location of IMC Injection Point, paragraph 1, p. 3 col. 1 paragraphs 3-4); and

placing said injection nozzle in said optimal placement position (p. 1 col. 2 section Optimal Location of IMC Injection Point paragraph 1);

using said method in conjunction with a method to minimize a cure time of the in-mold coating composition (p. 2 col. 2 section Minimization of IMC Cure Time paragraphs 1-2);

Zuyev does not teach wherein said step of predicting a coating fill pattern in said mold is performed by determining the following a) the relationship between a fluidity, S, of an in mold coating composition and a pressure gradient present in said mold

Chen teaches a method to minimize a cure time of the in-mold coating composition; wherein said step of predicting a coating fill pattern in said mold is performed by determining the following a) the relationship between a fluidity, S, of an in mold coating composition and a pressure gradient present in said mold (p. 2 col. 2 the last 2 lines and p. 3 col. 1 lines 1-2 and equation 11. fluidity S is a ratio between flow rate and gradient pressure; equation 11 establish a relationship between flow rate and gradient pressure, so it implicitly determines the relationship between a fluidity, S, of an in mold coating composition and a pressure gradient present in said mold), and b) the relationship between the coating thickness of the in mold coating composition and an injection pressure (p. 3 col. 1 lines 1-2 and equation 11. Equation 11 reads onto this limitation).

It would have been obvious to one of ordinary skill in the art to combine the teachings of Zuyev and Chen. Chen's teachings would have optimized the process of in-mold coating (p. 1 col. 1 the abstract and col. 2 last paragraph, and p.2 col. 1 paragraph 1).

24. As per claim 22, Zuyev teaches instruction for carrying out said method are contained in a computer readable medium (p. 1 col. 2 of the page section Optimal Location of IMC Injection Point paragraph 1 of the section).

25. As per claim 23, the discussions in claim 22 imply this limitation. It is, therefore, rejected for the same reasons.

26. As per claim 24, it is a choice for one of ordinary skill in the art to input data necessary for performing said steps into said computer manually. This limitation is, therefore, rejected.

27. As per claim 27, Zuyev teaches said process minimizes the potential for surface defects in an in mold coating formed on a surface of said molded article (p. 1 col. 2 section Optimal Location of IMC Injection Point paragraph 1).

28. As per claim 28, Chen teaches said method is used for an in-mold coating process including at least filling, packing, and solidification phases (p. 2 col. 2 paragraph 2).

Claims 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zuyev in view of Chen as applied to claim 20, and further in view of Ladeinde.

29. As per claim 21, Zuyev and Chen do not teach using a finite element method combined with a control volume approach can be used to numerically determine said relationships.

However, Ladeinde teaches this limitation (p. 515 paragraph 1 and page 515 section Code validation and application 1st paragraph of the section last 6 lines of the paragraph).

It would have been obvious to one of ordinary skill in the art to combine the teachings of Zuyev, Chen, and Ladeinde. Ladeinde's teachings would have controlled non-linear instability (p. 515 paragraph 1).

Claims 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zuyev in view of Chen as applied to claim 23 above, and further in view of Walsh (US Patent 6,099,162).

30. As per claim 25, Zuyev teaches data necessary for performing said steps is provided to said computer by an instrument taking differential scanning calorimetry measurements,

but does not teach the feature of <u>automatically</u> provided to said computer.

However, Wash teaches this limitation (col. 1 lines 43-53 and col. 3 lines 27-36. The sensors can be considered differential scanning calorimeters to obtain measurements as recited in col. 1 lines 43-53).

It would have been obvious to one of ordinary skill in the art to combine the teachings of Zuyev, Chen, and Walsh. Wash's teachings would have accurately and continuously monitored the monitoring the curing process (col. 3 lines 24-27).

31. As per claim 26, Zuyev teaches said data is stored in a data collection means associated with said instrument (p. 2 col. 2 paragraph 3 of section Minimization of IMC Cure Time. These paragraphs teach using data measured by DSC to perform calculation. This suggests this limitation) and using computer with data input to perform analysis (p. 1 paragraph 1 of section Optimal Location of IMC Injection Point).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CUONG V. LUU whose telephone number is (571)272-8572. The examiner can normally be reached on Monday-Friday 8:30-5:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini Shah, can be reached on 571-272-22792279. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. An inquiry of a general nature or relating to the status of this application should be directed to the TC2100 Group receptionist: 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Cuong V Luu/

Examiner, Art Unit 2128

/Hugh Jones/

Primary Examiner, Art Unit 2128